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FIELD ELECTRON EMISSION ELEMENT

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Abstract:

PROBLEM TO BE SOLVED: To provide a field electron emission element to prevent all one line of cathode electrode line from falling into an uncontrollable state caused by a short circuit between an emitter electrode and a gate electrode.

SOLUTION: One cathode electrode line is composed of a stripe-like cathode wiring 2 and multiple island electrodes 3 lined up on one side of the wiring 2, and a gate electrode 8 is arranged on a peripheral of an insulation layer above each island electrode 3 area. A first and a second resonant layers 4, 5 with different resistance value are layered on part of a current control resistance layer and when an over current flows in an emitter cone 7 a layered thick film is destroyed and only the island electrode 3 connected to this emitter cone is electrically disconnected from the cathode wiring 2. The second resistor layer 5 is locally layered on the first resistance layer 4 each one individually for the multiple island electrodes 3.

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